Water & Base-Load Generation

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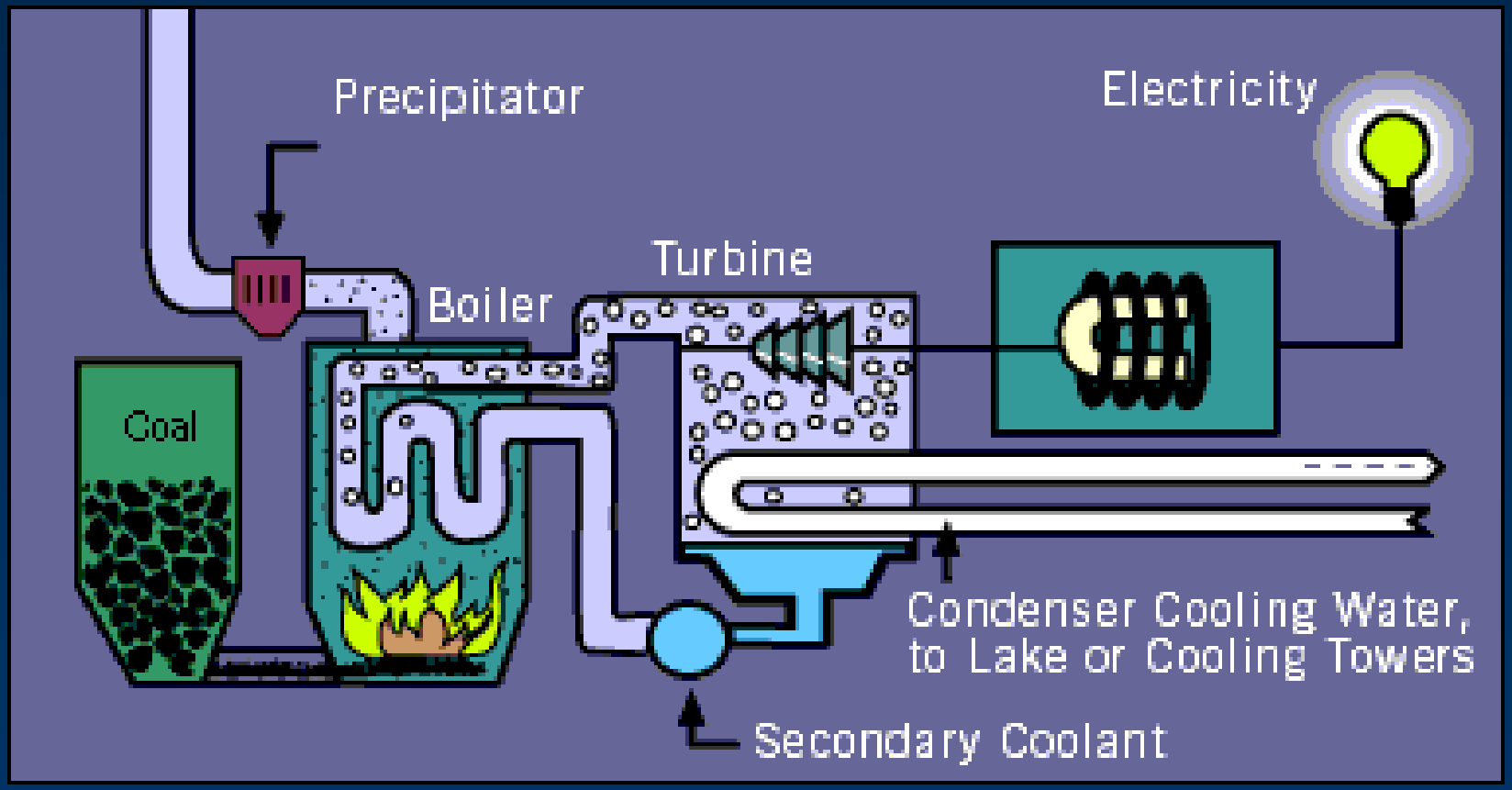
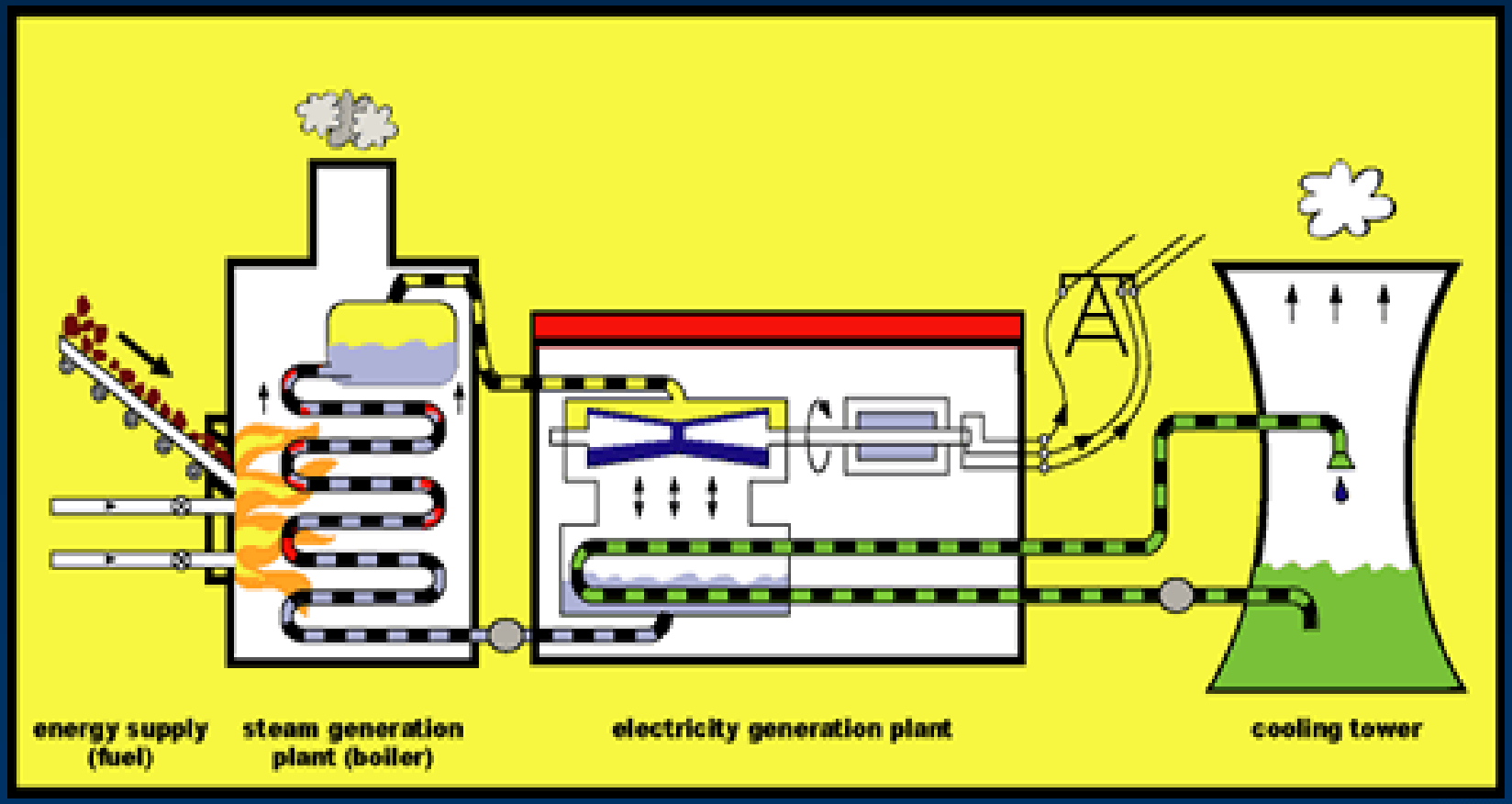
Overview

- Baseload Generation & Water Usage
  - Pulverized Coal, Oil, Natural Gas
  - Natural Gas Combined Cycle
  - Nuclear, Light Water Reactors
- Innovation Today
- Future Promise

Pulverized coal



Solid Fuel, Oil, Natural Gas

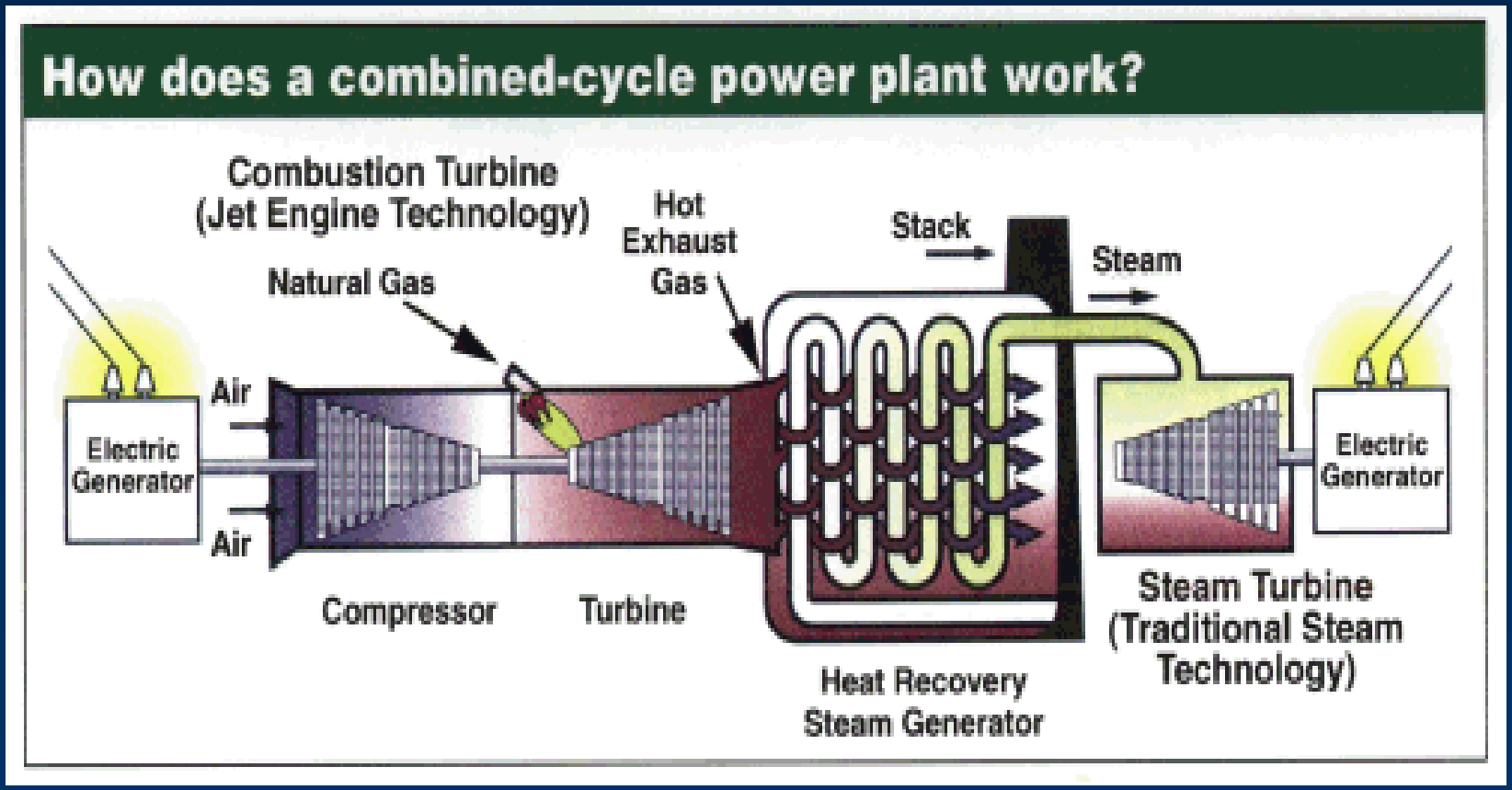


Water & Fossil Generation

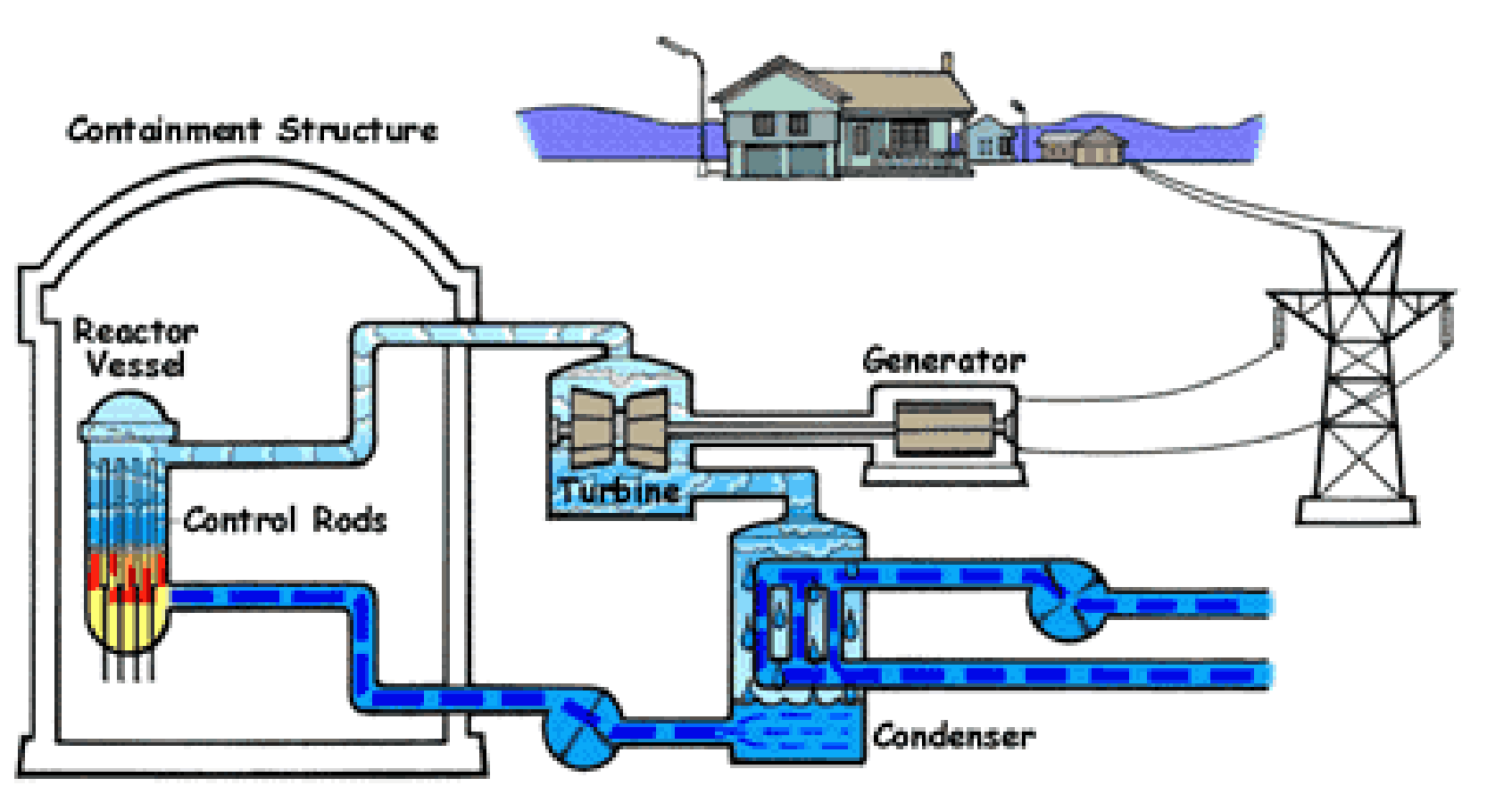
- Boiler water & make-up water
- Condenser cooling water
- Air pollution control systems-scrubbers
- Coal ash movement & plant wash down
- Domestic water use by workers

Combined-Cycle Natural Gas

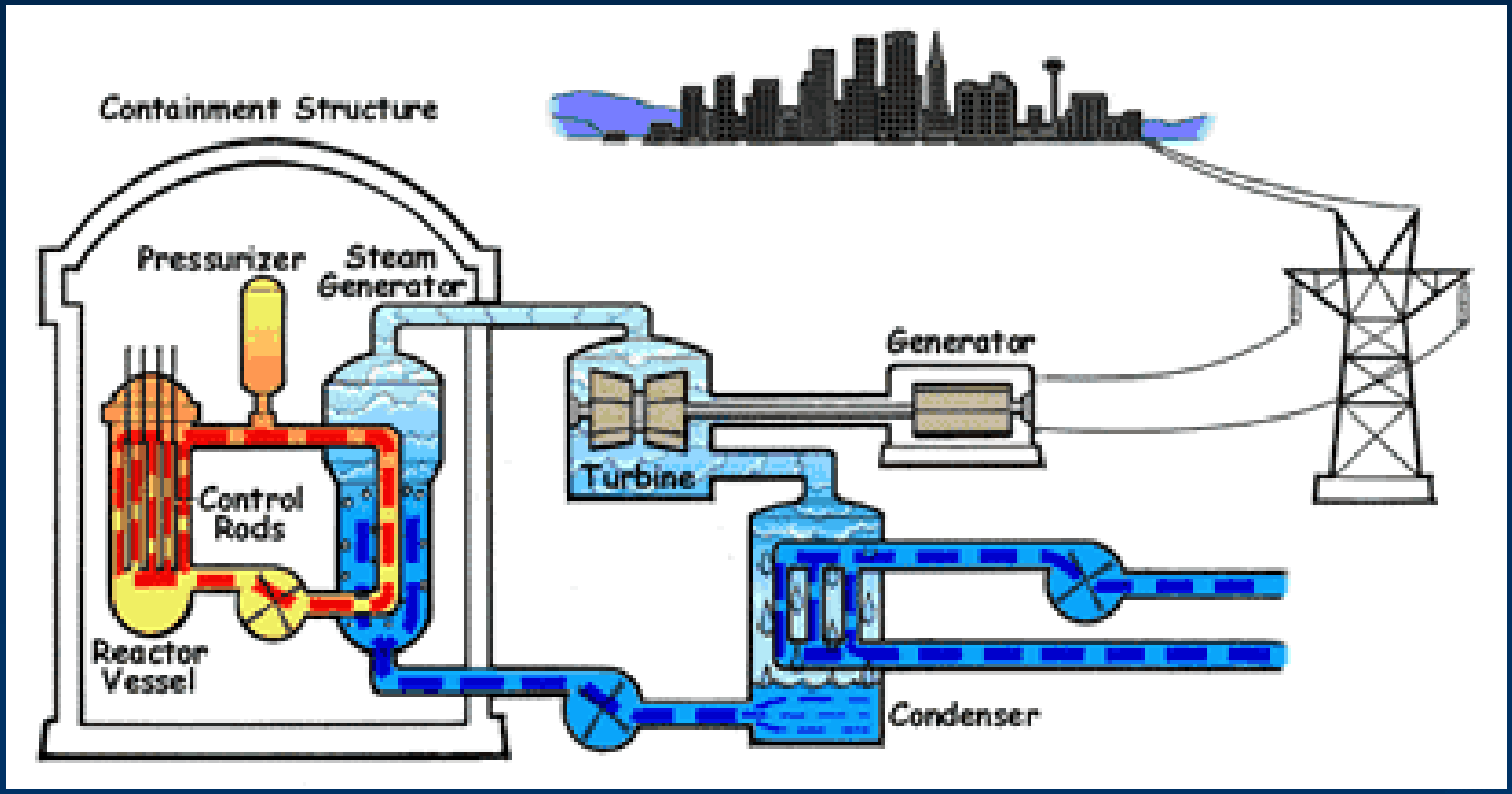
Potential to use 50% Less Water



Boiling Water Reactor



Pressurized Water Reactor



Light Water Reactors

- Primary loop & make-up
- Secondary loop & make-up (PWR only)
- Condenser cooling water
- Fuel pool and safety injection systems
- Chemistry control & radwaste treatment
- In house laundry systems
- Domestic water use by employees

Innovative Water Use Today

Palo Verde

- Palo Verde is the only nuclear energy facility in the world that uses treated sewage effluence for cooling water. The plant uses effluent water from the City of Phoenix, where it is treated in an 80-acre reservoir for use in the plant's cooling towers. More than 20 billion gallons of this water are recycled each year.

Future Promise--HTGR

- Suitable for remote, arid environs
- Expandable, modular construction
- Passive safety features
- Long term, continuous energy for:
  - electricity generation
  - district heating or supply of process heat
  - hydrogen production or coal gasification
  - fresh water production through desalination

Pebble Bed Modular Reactor